

Simplified Internet Access for Senior Citizens

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October 13th, 2008

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Chapter 1

Background

The Internet is a powerful source of information for people of all ages and backgrounds, but the population is segregated in its knowledge of technology. This separation is especially apparent in our 65 year+ population, who also have failing eyesight and in many cases no prior experience with computers to work from. When many senior citizens look at accessing the Internet, they see an insurmountable learning curve which causes them to simply give up.

Behavioral Differences in Older Adults
Spend more time reading text and instructions.
Had difficulty reading the text on the screen.
More likely to prefer larger text size.
Difficulty with window management and scrolling.
Were often confused with jargon and technical terms.

Table 1.1: <http://hid.fidelity.com/q32002/age.htm>

Since the inception of the Internet in the early 1990s, the number of users connected to the World Wide Web has grown to over 250 million in North America alone. However, of over 36 million senior citizens in the United States over the age of 65, only about 9 million are connected to the Internet. These senior citizens face many problems of a different sort when attempting to access the net. Among the obvious physical attributes often affected by the human aging process are eyesight, precision of movement, and memory. Pull-down menus, cascading walking menus, and other moving

interface elements also cause problems for seniors who are not always steady with the mouse. These issues contribute to frustration amongst first time users, and can frighten them away.

Chapter 2

Project Proposal

This project aims to eliminate some of these issues by creating a graphical user interface that is geared towards the senior citizen. A simple, Internet-focused program will help senior citizens access popular Internet programs with ease. The program will start when the operating system starts, and go full-screen immediately. It will show a list of programs such as an Internet browser or an e-mail client, and the user can choose which program to start by using the arrow keys and pressing enter or by clicking the program with the mouse.

Large font sizes and colourful icons will make choosing the desired program easy. Tutorials will introduce first-timers to Internet terminology and attempt to educate users on how to browse the internet and check email. This will increase senior citizen usability and possibly even extend into programs beyond that of just internet and email.

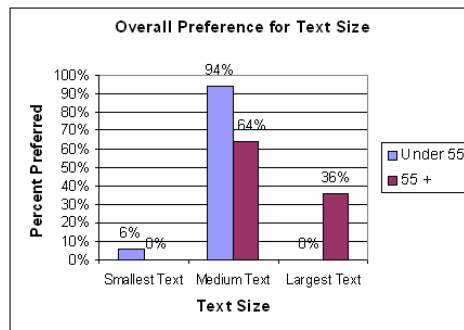


Figure 2.1: http://hid.fidelity.com/q22002/age_fig3.gif

Chapter 3

Project Mockup

3.1 Examples from a Standard XP Install

When senior citizens first start up a computer running Microsoft Windows XP, they might see a confusing screen such as the one shown in Figure 3.1. The screen does not give a clear indication of what to click in order to open a browser or e-mail window.



Figure 3.1: An everyday Windows XP desktop

If a senior citizen is lucky enough to figure out that they should press the start button and bring up a program list, things get even more confusing, as shown in Figure 3.2. Branched menus open from the start button, requiring a steady hand to prevent the user from traversing down the wrong

window. The program icons are very small, and there are a ton of them. It is easy to see how this could be confusing to a senior citizen, who might not have the best eyesight or the motor reflexes required to navigate through this listing of programs. Most importantly of all, how would a senior citizen know *which* program to run?

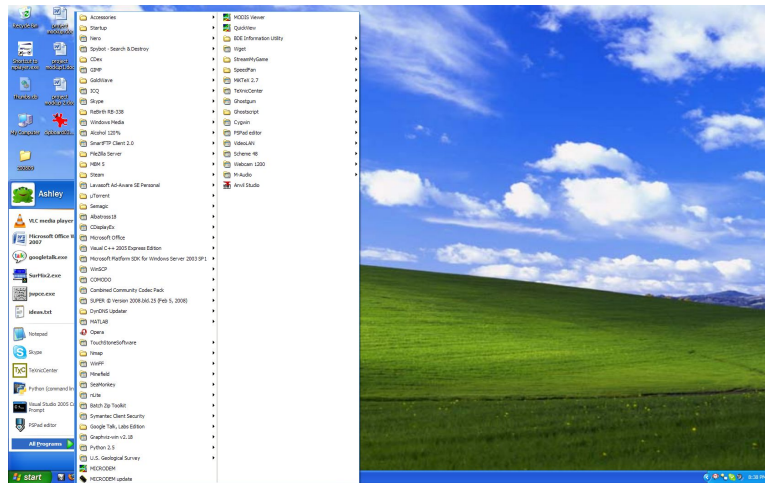


Figure 3.2: An everyday Windows XP desktop with the start menu opened

3.2 Project Mockup, User Space

Our project seeks to improve the accessibility of Windows PCs by presenting an alternative to the start menu and its confusing array of options. With our project, when Windows starts it will launch immediately into our program, which features big, hard-to-miss buttons and customizable labelling so that a senior citizen will know exactly what to press in order to start the program they like. This is made obvious in Figure 3.3. The final version of the program will have more features, such as optional bright, colorful banners instead of simple text buttons, and administrative tools to let knowledgeable computer users configure which programs are shown and where they are located.



Figure 3.3: Project Mockup, User Screen

3.3 Project Mockup, Admin Space

Figure 3.4 shows an example of what the administrative panel might look like. Change and delete buttons let the administrative user delete buttons or change the programs that the buttons run. The add program button lets the administrator add a new program to the list, and the return to main program takes the program out of administrative mode and back to plain user mode. With this mode, a knowledgeable friend, relative, or caretaker can add, delete, or change the programs being launched in order to make the project even more relevant for the particular senior citizen using it.

Figures 3.6 and 3.7 show examples of the program with buttons sorted into multiple columns. By changing the number of columns, the administrative user can adjust how the user display is shown. The size of the buttons and the size of the text will all automatically adjust to fill as much screen space as possible, while still retaining some algorithmically-determined spacing between the buttons.



Figure 3.4: Project Mockup, Admin Screen with One Column



Figure 3.5: Project Mockup, Admin Screen with Two Columns

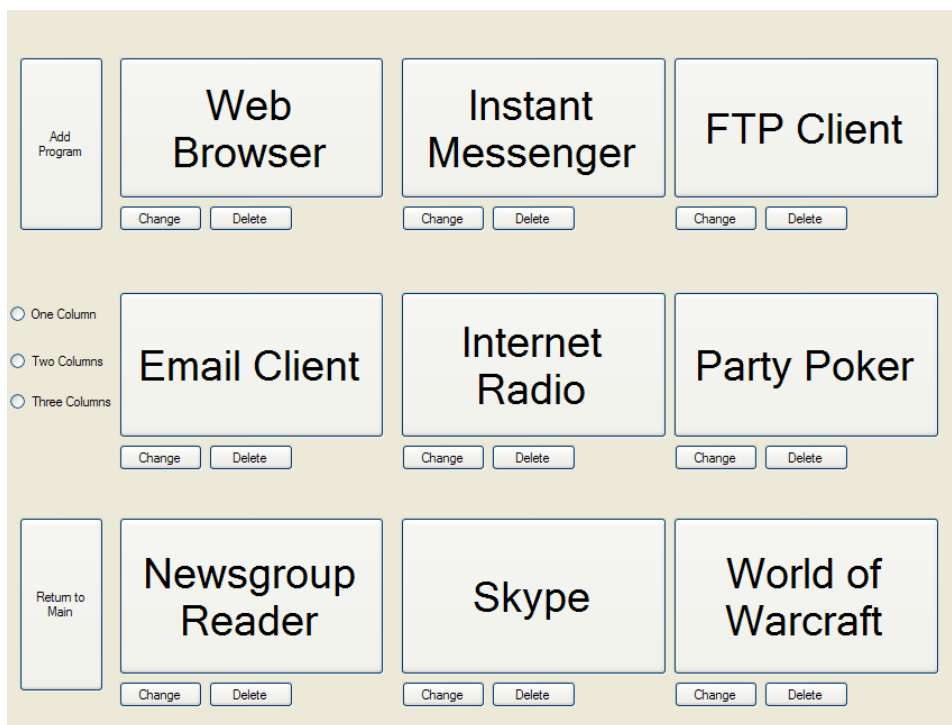


Figure 3.6: Project Mockup, Admin Screen with Three Columns

Chapter 4

Project FSM

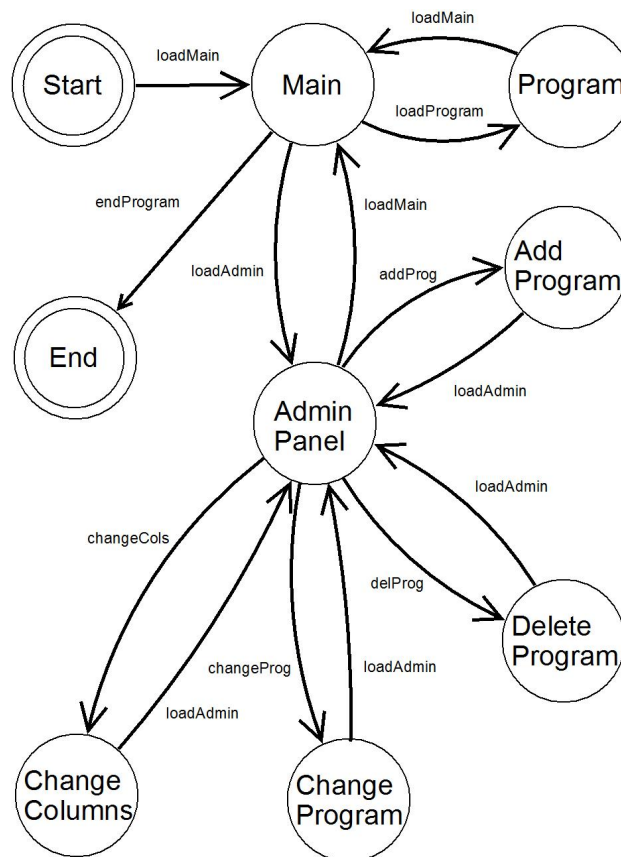


Figure 4.1: Finite State Machine

4.1 Significant Issues

4.1.1 Design Issues

- Making sure that default buttons, etc., are straightforward and easy to understand
- Ensuring that the terms used in the default buttons used are not complex or confusing wherever possible (i.e., instead of "Firefox", using "Browse the Internet" as a label)
- Keeping the interface 'clean' – making sure that there are not an overwhelming amount of buttons, etc.

4.2 Possible Test Cases/Scenarios

- Adding an application with one program already installed in the system
- Adding an application with several programs already installed in the system.
- Removing an application with one program already installed in the system
- Removing an application with several programs already installed in the system.
- Launching an application
- Changing system options
- User enters invalid characters as password
- Installed program is not functioning correctly

4.3 Conditions

4.3.1 Load Application

- Must be installed on user's system
- Must be registered with our shell (i.e., added to master program list)

4.3.2 Add Application

- Must be installed on user's system

4.3.3 Remove Application

- Must be registered with our shell in order to remove it

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